Our Job Is to Get It There

One of the beauties of software is how quickly we can make changes compared to the hardware world. This has given rise to the tremendous expansion of military software applications, which has occurred during the past thirty odd years. I recently saw an illustration that plotted the number of lines of software on U.S. fighter aircraft starting with the F-111 and F-4 and progressing to the F/A-22 and F-35. It was exponential as one might expect (we software types are beneficiaries of Moore's Law and hardware improvements after all). The interesting point to remember is that this embarrassment of riches contains a daunting challenge, namely efficiently harnessing this great flexibility that software affords. We have found over the years that there is "no royal road to learning" as Euclid said. To do software right we have to do it the old-fashioned way, that is, relentless commitment to quality: employing peer reviews, configuration control, documentation, and testing.

The topic of this issue is "Systems: Fielding Capabilities." It is really the reason that all of us who provide software capability are employed. It is our job to get what is needed to those who need to use it. Often we think of software as an intellectual pursuit. All of us have felt the exultation of solving a difficult problem or finding a creative solution but ultimately we must focus on our customer, not ourselves. To this end, it is not enough that we satisfy ourselves with our software abilities but that we satisfy those who depend upon us. Fielding capabilities entails doing our work both well and quickly. Well so the warfighter is not disappointed, or worse, in undue risk, and quickly so the warfighter is not kept waiting. This issue will help you do that.

Thomas F. Christian, Jr.
Warner Robins Air Logistics Center Co-Sponsor

Stay Focused on the User

This month's theme, "Systems: Fielding Capabilities," developed during a discussion with CrossTalk's sponsors about merging hardware and software. As they considered this, they emphasized that importance should not be placed on the system components of hardware and software; importance should be placed on the capability required by the user. This is such an important concept that we decided to build a theme around it.

We start our theme discussion with *Key Elements in Fielding Capabilities* by John D. Holcomb and Michael Hoehn. These authors discuss the benefits of testing environments that emulate the true user environment and the need for ongoing communication among stakeholders. In *Delivering Capabilities Through Partnerships,* Chris D. Moore details his experience with a military-industry partnership focused on providing the U.S. military with needed core competencies to ensure continued support to the warfighter. We conclude our theme articles with *MILS: Architecture for High Assurance Embedded Computing* by several authors who discuss information assurance as a method for enabling the capability to win wars via superior knowledge.

We continue this issue with our supporting articles. In *Six Steps to a Successful COTS Implementation,* Arlene F. Minkiewicz shares key points to contemplate and implement when considering commercial off-the-shelf as part of your end-product. Paul J. Solomon and Bill Ravensberg also contribute with *Performance-Based Earned Value* and *Balanced Scorecards: From Golf to Business*, respectively, explaining how earned value and balanced scorecards are each key to tracking project progress.

CrossTalk continues to aim to provide readers with the capability to buy and build software better. I hope we further our mission with this issue.

Elizabeth Starrett
Associate Publisher